

1. (previously presented) A current source switching circuit with reduced charge injection, comprising:

a current source;

a transistor switch path;

a pull-down mirror path, comprising an amplifier and a switch controlling current flow to said amplifier, in parallel with said transistor switch path operating to ensure a constant current flow from said current source; and

a first load;

wherein said transistor switch path and said pull-down mirror path operate complementary to one another to reduce said charge injection flowing to said first load during switching of said current between said first load and said pull-down mirror path.

2. (currently amended) The current source switching circuit according to claim 1, wherein:

said current source is connected between a power source and a first side of said transistor switch path.

3. (currently amended) The current source switching circuit according to claim 2, further comprising:

said first load connected between a ground and a second side of said transistor switch path.

4. (previously presented) The current source switching circuit according to claim 3, wherein:

said first load is a charging capacitor.

5. (currently amended) The current source switching circuit according to claim 1, wherein said transistor switch path comprises:

a MOS transistor.

6. (currently amended) The current source switching circuit according to claim 1, wherein said transistor switch path comprises:

a first serial combination of a functional MOS transistor with a first compensating transistor connected to a source of said functional MOS transistor and a second compensating transistor connected to a drain of said functional MOS transistor.

7. (currently amended) The current source switching circuit according to claim 6, wherein said transistor switch path further comprises:

a second serial combination of a complementary functional MOS transistor with a first complementary compensating transistor connected to a source of said complementary functional MOS transistor and a second complementary compensating transistor connected to a drain of said complementary functional MOS transistor.

8. (previously presented) The current source switching circuit according to claim 1, wherein:

said amplifier is a pull-down amplifier.

9. (original) The current source switching circuit according to claim 8, wherein:

said pull-down amplifier is configured as a voltage follower to have an output which follows a current source side of said switch.

10. (canceled)

11. (previously presented) The current source switching circuit according to claim 1, wherein said pull-down mirror path switch comprises:

a series combination of a functional transistor with a respective compensating transistor connected to either side of said functional transistor.

12. (original) The current source switching circuit according to claim 2, wherein said current source comprises:  
a MOS transistor.

13. (currently amended) The current source switching circuit according to claim 1, wherein:

said amplifier is a pull-down amplifier.

14. (currently amended) The current source switching circuit according to claim 13, wherein:

said current source is connected between a ground and a first side of said transistor switch path.

15. (canceled)

16. (canceled)

17. (canceled)

18. (previously presented) A method of reducing charge injection from a current source through a current switch into a load, said method comprising:

providing a pull-down mirror path in parallel with said current switch, said pull-down mirror path and said current switch operating to ensure a constant current flow from said current source to said load so as and to maintain a given current level produced by said current source;

turning a switch in said pull-down mirror path on when said current switch is turned off; and

turning said switch in said pull-down mirror path off when said current switch is turned on;

wherein said current switch and said pull-down mirror path operate complementary to one another to reduce said charge injection flowing to said load during switching of said current flow between said load and said pull-down mirror path.

19. (original) The method of reducing charge injection from a current source through a current switch into a load according to claim 18, wherein:

said current source is a MOS transistor.

20. (canceled)

21. (previously presented) A method of switching a current source out from a load, said method comprising:

opening a transistor switch connecting said current source to said load; and

substantially simultaneously with said step of opening, closing a switch in a pull-down mirror path, comprising an amplifier, in parallel with said transistor switch so that current from said current source flows through said pull-down mirror path, said pull-down mirror path and said transistor switch operating complementary to one another to ensure a constant current flow from said current source and to maintain a given current level produced by said current source;

wherein said load receives said current flowing from said current source when said current is switched from said pull-down mirror path to said load thereby reducing charge injection from said current source to said load during said switching of said current between said load and said pull-down mirror path.

22. (previously presented) Apparatus for switching a current source out from a load, comprising:

means for opening a transistor switch connecting said current source to said load; and

means for closing a switch in a pull-down mirror path in parallel with said transistor switch at substantially simultaneously a same time as said means for opening opens said transistor switch so that current from said current source flows through said pull-down mirror path, said pull-down mirror path comprising an amplifier, said pull-down mirror path and said transistor switch operating complementary to one another to ensure a constant current flow from said current source and to maintain a given current level produced by said current source;

wherein said load receives said current flowing from said current source when current is switched from said pull-down mirror path to said load thereby reducing charge injection from said current source to said load during said switching of said current between said load and said pull-down mirror path.